

REMARKS

Applicants thank the Examiner for a careful examination of the pending claims and for withdrawing the rejections in the previous Action in light of the Amendment of January 30, 2008.

Drawings

The drawings were objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “101” has been used to designate both the “sensor” and “porous membrane”.

Foremost, there is no reference character “101” in the figures. If the Examiner is referring to reference character “110,” please note that reference character “110” refers to a porous membrane, which could function as a sensor. Persons of ordinary skill in the art would recognize that reference character “110” refers to a porous membrane, and when the porous membrane functions as a sensor, the reference character “110” refers to the porous membrane functioning as a sensor.

Claim Objections

Claims 57-62 were objected to because of the they contain a typographical error, “hallow” should be changed to --hollow--. This objection should be withdrawn in light of this Amendment.

Claims Rejections - 35 USC § 112

Claims 1, 8-9, 22, and 29-30 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

This rejection is respectfully traversed. This rejection should be as claims 8 and 29 have been canceled.

Claims Rejections - 35 USC § 102

Claims 1, 8-12, 15-22, 29-33, 36-40, 56, 59, 61 and 64 were rejected under 35 U.S.C. 102(e) as being anticipated by US Patent Pub. No. 2003/0136679 to Bohn et al., hereinafter “Bohn”.

This rejection is respectfully traversed.

Claims 1 and 22 now recite that “the porous membrane is a porous silicon membrane.” The Examiner has acknowledged that Bohn fails to disclose a porous silicon membrane.

Claims Rejections - 35 USC § 103

Claims 13-14, and 34-35 were rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Pub. No. 2003/0136679 to Bohn in view of US Patent No. 6,248,539 Ghadiri et al., hereinafter (“Ghadiri”).

This rejection is respectfully traversed.

Applicants respectfully submit that persons of ordinary skill in this art would not have modified Bohn by replacing the porous polycarbonate (PC) membrane 22 of Bohn with Ghadiri’s porous silicon membrane of Figure 1 of Ghadiri for the following reasons.

In the Background of the Invention, Bohn’s explains that “prior three-dimensional microfluidic devices use discrete channels to bridge, rather than connect, independent analysis modules. In other words, the channels passively connect the modules and do not have gates or valves for selectively permitting and preventing flow from one module to the next.” Thus, in order to obtain an active channel, “[a]s illustrated in FIG. 2 [of Bohn], the nanoporous membrane 22 has at least one pore (and preferably a plurality of pores) 42 *extending from the first side 32 of the membrane to the second side 34 of the membrane* (emphasis added).” See paragraph [0026] of Bohn. On the other hand, as shown in Figure 1, Ghadiri discloses a silicon wafer having *a porous layer on a bulk non-porous silicon substrate*. In short, by replacing Bohn’s porous PC membrane with Ghadiri’s porous silicon, one would destroy an essential feature of Bohn’s porous membrane, i.e., namely “at least one pore (and preferably a plurality of pores) 42 *extending from the first side*

32 of the membrane to the second side 34 of the membrane (emphasis added).” *Id.* Thus, Applicants respectfully submit that persons of ordinary skill in this art would not have been motivated to combine Bohn with Ghadiri to as to replace the porous PC membrane of Bohn with the silicon wafer of Ghadiri having a porous layer on a bulk non-porous silicon substrate.

Claims 57 and 62 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bohn (US Patent Pub. No. 2003/0136679). This rejection is respectfully traversed and should be withdrawn as 1 and 22 should now be allowable.

Double Patenting

Claims 1, 8-22, 29-40, 56-57, 59, 61-62 and 64 were rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 7-11 and 23-24 and 30 of U.S. Patent No. 6,606,543 to Yamakawa et al.

This rejection is respectfully traversed and should be withdrawn in light of the terminal disclaimer attached herewith.

Claims 13-14 and 34-35 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 38-39 and 41 of copending Application No. 10/856,372.

As this rejection is a provisional rejection, it should be held in abeyance until indication of allowance of the claims.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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